Let’s talk business -
How to optimize for efficiency & value creation
Value & Efficiency for more clients

1. Make Win/Wins
2. Eliminate Waste
3. Drive Accountability

Rogo Case Study + 7 Habits Thinking
Our robotic soil sampling services

eliminate 10-20% sampling error

and increase ROI of soil fertility inputs
Rogo Traction

Robot Service
Sold Out

AgFunder Award - 3000 farmers

$200K Ag-Celerator Award

30+ customers
0% churn
50K paid acres
Rogo Plan

Today: IN, IL, OH

1-5 Years: Midwest, then North America

5+ Years: Global
1. Make Win/Win’s
What is a win/win?

Agreement between 2 parties with:

Desired Results
What (not how) and at what quality.

Guidelines
limits on how it can get done. try to minimize.

Accountability
what the reporting mechanism is… more later
General Win/Win Examples

Customers
on soil sampling
logistics mgmt.

Farmers can be reasonable - Farmer Rick example.

Employees

Usually laziness on what manager wants.

Process (How) docs create waste.
Soil Sampling - Results vs Methods

Desired Results
- Depth
- Location
- Timing

Methods
- Use an Ipad
- Use a hand-probe
- “Precision Ag”
- “Grid Sampling”

Should be Focus
2. Eliminate Waste
What is waste - according to TPS / Lean?

- **Defects**: Waste from a product or service failure to meet customer expectations.
- **Overproduction**: Waste from making more product than customers demand.
- **Waiting**: Waste from time spent waiting for the next process step to occur.
- **Unused Talent**: Wastes due to underutilization of people's talents, skills, and knowledge.
- **Transportation**: Wasted time, resources, and costs when unnecessarily moving products and materials.
- **Inventory**: Wastes resulting from excess products and materials that aren't processed.
- **Motion**: Wasted time and effort related to unnecessary movements by people.
- **Extra-Processing**: Wastes related to more work or higher quality than is required.
Tool: Value Stream Mapping (VSM)

Process Flow - with value + waste highlighted

- Customer opens a defect report
  - Value: 5 mins
  - Delay: 5 mins

- Support team triages, sends to dev
  - 2 hours

- Dev triages, adds to queue
  - 1 hour

- Dev fixes, tests fix
  - 2 days

- Fix deployed to production
  - 30 mins

Value Stream Mapping (VSM)
Soil Fertility Mgmt. - VSM

SAMPLING STRATEGY

COLLECTION

LAB ANALYSIS

PRESCRIPTION PROCESS

APPLICATION

Value

Waste:
Defects
Unused Talent

Outsourced

Value

Value (if Retailer)
Sample Collection - Defects & Solutions

- Depth Variance
  - Depth $\Delta < \frac{1}{8}$ in

- Location Variance
  - Location $\Delta < 1$ foot

- Misc. Errors (Mislabeling, etc)
  - 10-20% Measured Error
  - 100% Predictable
Location Accuracy Matters - Study

Sampled A-points twice, then moved points 25 ft off to create B-points.

25% of lime in different spot! 25% error
The Solution: Autonomous Robotic Soil Sampling

- **Exact Depth**
  - Patent-Pending High-Speed Self-Cleaning Auger.

- **Right Location**

SOLD AS A SERVICE

Version 4

4x Productive
Grower ROI

Human Collection

Conservative Error 10%

Fertilizer $50 / acre

Fertilize 3x per sample

Profit Gain $15 / acre

20% Measured Error

Bad Soil Bag

Max Added Price of Service $2 / acre

7 X ROI
3. Drive Accountability
What is accountability?

Objective, Transparent, Consistent Reporting of Results

Make it visible | What gets measured, gets improved.
Good Examples

Yield Monitor
Planting Monitor
Monthly Financial Statement
Bad Examples

Feelings

“Blip” Reporting

Methods vs Results
Soil Sampling Bad Examples

Spying

Protocol

Human Estimation
Soil Sampling Accountability

Reported location & depth of every sample core

No more mystery.
The Value of Soil Sampling Accountability

- Done As Prescribed
- Root Cause Quickly
- Build Customer Trust
Comparison to the Yield Monitor

Yield Monitor

Soil Sampling

Before

After

Field by Field

Strip Tests

Egregious Errors

Granular Studies
You can only study, what you can measure.

- Sample Placement
- Depth Decisions
- Fertility Innovation
Business Summary

Value & Efficiency for more clients

1. Make Win/Wins
2. Eliminate Waste
3. Drive Accountability

What not how.
Value Stream Mapping
Make it visible
Rogo Summary

1. Make Win/Wins
2. Eliminate Waste
3. Drive Accountability

Focus on Accuracy & Trust
Eliminate 10-20% error “defects”
Make the next generation of fertility mgmt. possible
THANK YOU

BOOTH # 31